

AMENDMENTS TO THE CLAIMS

1. (Original) A base fluid comprising: at least about 5 wt % olefins; at least about 5 wt % n-paraffins; and between about 2 and 50 wt % branched paraffins wherein substantially all of the branch groups are monomethyl and wherein the ratio of terminal monomethyl branching to internal monomethyl branching is at least about 1:1.5.
2. (Original) The base fluid of claim 1 wherein the ratio of terminal monomethyl branching to internal monomethyl branching is at least about 1:1.
3. (Original) The base fluid of claim 1 wherein the n-paraffins are present in an amount of at least about 20 wt % and wherein the ratio of terminal monomethyl branching to internal monomethyl branching is at least about 1.5:1.
4. (Original) The base fluid of claim 1 wherein the n-paraffins are present in an amount of at least about 40 wt % and wherein the ratio of terminal monomethyl branching to internal monomethyl is at least about 2:1.
5. (Original) The base fluid of claim 1 wherein the base fluid is a product of a Fischer-Tropsch reaction.
6. (Original) The base fluid of claim 5 wherein the Fischer-Tropsch reaction incorporates feed syngas having 10-60% N₂.
7. (Original) A drilling fluid comprising: the base fluid of claim 1.
8. (Original) The drilling fluid of claim 7 further comprising: at least one additive selected from the group of surfactants, viscosifiers, weighting agents, fluid loss control agents and proppants.
9. (Original) A drilling fluid comprising: from about 2 to about 90 wt % olefins; from about 2 to about 50 wt % isoparaffins; wherein the isoparaffins are substantially terminal monomethyl

branched. from about 5 to about 90 wt % n-paraffins; and from about 0 to about 10 wt % oxygenates.

10. (Original) The drilling fluid of claim 9 wherein the olefins are present in an amount of from about 7 to about 10 wt %.

11. (Original) The drilling fluid of claim 9 wherein the isoparaffins are present in an amount of from about 3 to about 15 wt %.

12. (Original) The drilling fluid of claim 9 wherein the n-paraffins are present in an amount of from about 65 to about 90 wt %.

13. (Original) The drilling fluid of claim 9 wherein the oxygenates are present in an amount of from about 0 to about 5 wt %.

14. (Original) The drilling fluid of claim 9 wherein the base fluid is a product of Fischer-Tropsch reaction on a synthesis gas.

15. (Original) The drilling fluid of claim 14 wherein the Fischer-Tropsch reaction incorporates feed syngas having 10-60% N₂.

16. (Original) The drilling fluid of claim 14 wherein the synthesis gas is produced by autothermal reformation.

17. (Original) The drilling fluid of claim 16 wherein the autothermal reformation occurs in the presence of air.

18. (Original) The drilling fluid of claim 16 wherein the autothermal reformation occurs in the presence of 10-60% N₂.

19. (Original) The drilling fluid of claim 9 further comprising: at least one additive selected from the group of surfactants, viscosifiers, weighting agents, fluid loss control agents and proppants.

20. (Currently amended) The drilling fluid of claim 9 wherein the olefins are from about 7 to about 10 wt %; the isoparaffins are from about 2 to about 15 wt %; ~~wherein the isoparaffins and~~ and are substantially terminal monomethyl branched. ~~The~~ ; the n-paraffins are from about 65 to about 90 wt %; and the oxygenates are from about 0 to about 5 wt %.
21. (Original) The drilling fluid of claim 20 wherein the drilling fluid is a product of a Fischer-Tropsch reaction.
22. (Original) The drilling fluid of claim 20 further comprising: at least one additive selected from the group of surfactants, viscosifiers, weighting agents, fluid loss control agents and proppants.
23. (Original) The drilling fluid of claim 20 wherein the base fluid comprises from about 25 to about 85 volume % of the drilling fluid.
24. (Original) The drilling fluid of claim 23 wherein the base fluid comprises from about 25 to about 85 volume % of the drilling fluid.
25. (Original) The drilling fluid of claim 22 wherein the Fischer-Tropsch reaction incorporates feed syngas having 10-60% N₂.
26. (Original) The drilling fluid of claim 23 wherein the feed syngas is produced by autothermal reformation in the presence of air.
27. (Withdrawn) A process for producing a drilling fluid comprising the steps of: (a) producing a light Fischer-Tropsch liquid; (b) distilling the light Fischer-Tropsch liquid to obtain a C₁₃-C₂₀₊ product having C₁₃-C₂₀₊ hydrocarbons and oxygenates. (c) dehydrating all or a part of the alcohols in the C₁₃-C₂₀₊ product by passing the C₁₃-C₂₀₊ product over an activated alumina catalyst to produce a dehydrated product; (d) recovering the dehydrated product; and (e) separating the aqueous and organic phases of the dehydrated product.

28. (Withdrawn) The process of claim 27 further comprising the step of: (f) adding one or more additive selected from the group of surfactants, viscosifiers, weighting agents, fluid loss control agents and proppants to the organic phase of the dehydrated product.
29. (Withdrawn) The process of claim 27 further comprising the step of (b₁) vaporizing the C₁₃-C₂₀₊ product before step (c) and after step (b).
30. (Withdrawn) The process of claim 29 wherein the dehydrated product from step (c) is in the gaseous state and step (d) further includes condensing the dehydrated product.
31. (Withdrawn) The process of claim 30 wherein the heat from condensing the dehydrated product is recycled to at least partially vaporize the C₁₃-C₂₀₊ product in step (b₁).
32. (Withdrawn) The process of claim 27 wherein the light Fischer-Tropsch liquid is produced from a feed syngas having 10-60% N₂.
33. (Withdrawn) The process of claim 27 wherein the feed syngas is produced by autothermal reformation in the presence of air.
34. (Withdrawn) The process of claim 27 wherein a C₁₄-C₁₈ product is obtained in step (b) and dehydrated in step (c).
35. (Withdrawn) A method of drilling a borehole in a subterranean formation comprising the steps of: (a) rotating a drill bit at the bottom of the borehole; (b) introducing a drilling fluid into the borehole wherein the drilling fluid comprises a base fluid comprising: from about 5 to about 90 wt % olefins; from about 2 to about 50 wt % isoparaffins; wherein the isoparaffins are substantially terminal monomethyl branched; from about 5 to about 90 wt % n-paraffins; and from about 0 to about 10 wt % oxygenates.
36. (Withdrawn) The process of claim 35 wherein the drilling fluid comprises: from about 7 to about 10 wt % olefins; from about 2 to about 15 wt % isoparaffins; wherein the isoparaffins

are substantially terminal monomethyl branched; from about 65 to about 90 wt % n-paraffins; and from about 0 to about 5 wt % oxygenates.

37. (Withdrawn) The process of claim 35 wherein the base fluid is derived from a Fischer-Tropsch reaction.

38. (Withdrawn) The process of claim 37 wherein the Fischer-Tropsch reaction incorporates feed syngas having 10-60% N₂.

39. (Withdrawn) The process of claim 37 wherein the feed syngas is produced by autothermal reformation in the presence of air.